

ConstellationNet

Is ConstellationNet, or CNet, the same as C2 Constellation?

No. The C2 Constellation is an architecture within the Warfighting sub-enterprise. It deals primarily with command and control and intelligence, surveillance and reconnaissance mission areas within combat operations. The ConstellationNet, or CNet, on the other hand, deals strictly with communications and information IT infrastructure, services, and network operations. It's the computing and communications infrastructure that is employed by C2 Constellation mission systems and users.

In what way does the CNet support a service-oriented architecture approach?

As we migrate to a Service Oriented Architecture, the CNet Architecture will help define how "services" are validated, controlled, accessed, and managed. It will help define Key Interface Points, or KIPs, between Air Force and other systems/networks/services.

Are the other branches of service taking an approach similar to the Air Force?

They are similar in that they are using the DoD Architecture Framework to produce standard format products, but the scope, purpose, and viewpoint seem to vary. The Land-

WarNet (Army) and ForceNet (Navy) include warfighting missions and comm and info as well. Air Force leaders chose to separate the comm and info to facilitate aggregation of comm requirements instead of bringing a comm bill with every mission system. The Air Force CNet is broader in scope, and encompasses the entire breadth of the comm and info mission area (IT infrastructure, IT Core Netcentric Services, NetOps, Info Assurance) and covers us now through the year 2020 and beyond.

Can I build more secure systems using CNet?

Yes, if we implement Service Oriented Architecture and Enterprise Service Bus, we'll reduce the number of interfaces. Reducing the number of interfaces reduces risk because we have better configuration control and fewer points to protect.

Implementing policy-based management will help centralize/standardize policy enforcement across the network. XML tagging and content-based routing/content-based storage will allow us to control data distribution at the application level, not just the network or physical transport layer. XML tagging and Multi-Protocol Label Switching

will allow for priority and precedence routing across the network so that we deliver the right data to the right place at the right time based on mission need.

Mediation and Transformation services will help ensure the data is provided in the right (user requested) format. XML tagging will help ensure data can be found (is discoverable). XML tagging and MPLS can also work to encrypt data at the application level instead of the physical layer so that we can use a "black core" to transport classified and unclassified data across a common media instead of physically separating the networks.

Policy Enforcement Points can determine what information an individual assigned to a Role can have access to on a case-by-case basis, instead of using group policies.

Does CNet accommodate capabilities such as Global Hawk?

There are support aspects for Unmanned Aerial Vehicles and Unmanned Combat Aerial Vehicles such as the Predator, the X-35 and the X-45. But, as of yet, there's not much on the Global Hawk specifically.

However, the requirements for command and control of the platform and for video distribution are

being addressed.

What are the benefits of a CNet-based approach to IT systems development?

The hard part here is that in "the real world" you can't isolate variables to determine cause and effect. How much of the effect/impact is directly attributable to the architecture vs. some other variable(s)? We do know that within Air Force Communications Agency the architecture is being used to help perform capabilities-based portfolio management.

We map desired warfighting effects to required capabilities to portfolios to programs.

We look for capability gaps and duplication all along the way.

Another area where we have used the architecture is to support force transformation initiatives — the OV-5 operational activity model defines things we need to do to provide a net-centric information environment in the year 2012.

We then used the model to analyze the skills, tools, staffing, and organizational structure we will need.

We can also save thousands of hours and millions of dollars by realigning activities and operational nodes to the two Integrated Network Operations and Security Centers.